

# Sound the Alarm! Reducing Unnecessary Telemetry

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## Background

Telemetry is often used in the inpatient setting, but its use is poorly understood and the source of multiple alarms. The *Choosing Wisely*® is an initiative of the ABIM Foundation to help providers reduce overuse of tests and procedures.

- There are several published studies evaluating indications for use of telemetry, including the American College of Cardiology and the American Heart Association, whose guidelines were published in 2004.
- Reducing the use of telemetry in patient populations who do not meet the AHA criteria provides an opportunity to safely reduce cost, decrease alarm fatigue, and better focus staff time and effort.
- Additionally, with fewer alarms and no attached telemetry accessories, the patient's perception of acuity of illness may decrease, thus improving patient comfort and safety.

## Methods

Our current medical software ties telemetry with admission orders and does not delineate time on telemetry. Using a before-after trial, we compared telemetry use on admission. Previously, our institution utilized a general medicine pathway with a default order for telemetry so we changed the computerized ordering system to require a selection for telemetry, with options for acute cardiac issue, syncope, major surgery, or high risk. We then compared admission orders with telemetry from two months before and after the intervention as well as at one year follow-up.

## Telemetry Indications Based on AHA

<b>24 hours</b>
Chest pain, rule out MI Nonurgent percutaneous coronary intervention Implantation of an automatic defibrillator lead or a pacemaker lead Uncomplicated ablation of an arrhythmia Syncope of truly unknown origin Major surgery
<b>48 hours</b>
Acute MI CHF, acute and subacute Syncope with suspected arrhythmia Thoracic (noncardiac) surgery Stroke, acute Complex major surgery
<b>Indefinite</b>
Cardiac surgery during this admission Use of a wearable personal automatic defibrillator Complex cardiac disorders (ex. VT storm)

## Results

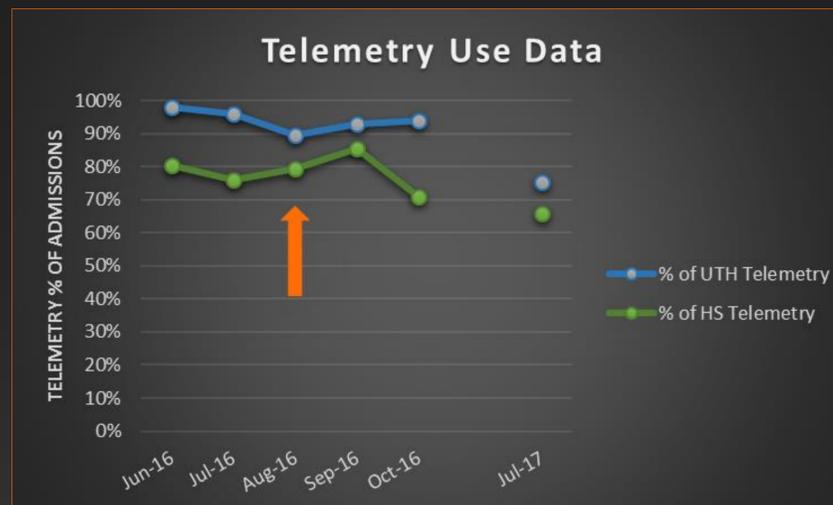
- Telemetry use on admission in the two months prior to the change was 97% of admissions for our hospitalist group and 78% of admissions for our internal medicine residents.
- In the two months following the change, telemetry had decreased to 93% in the hospitalist group and 77% in our resident group.
- At one year following the change to the electronic ordering system, telemetry orders in the hospitalist group had decreased to 75% of admissions, a 23% reduction. In our resident group, admissions had decreased from 78% to 66% percent of admissions, a 15% reduction.

## Conclusions

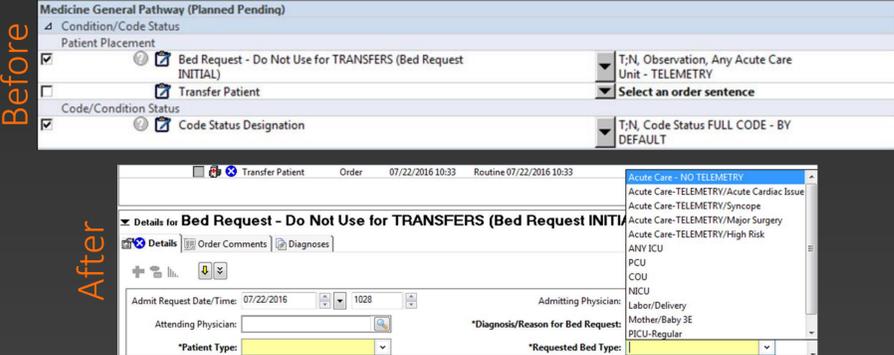
Modification of the electronic medical record general medicine pathway demonstrated a reasonable and successful target for improvement. Indeed, restructuring the pathway resulted in a long-term 23% reduction in the use of telemetry in our hospital group and 15% reduction in our internal medicine resident group, which will likely contribute to lower health care costs and improved patient wellbeing. As we still have overuse of telemetry, the hospital has formed an alarms team to continue targeted modifications. We believe that a targeted multidisciplinary approach with nursing, technicians, and physicians will further reduce our use of telemetry.

## References

- Dressler R et al. Altering overuse of cardiac telemetry in non-intensive care unit settings by hardwiring the use of American Heart Association guidelines. *JAMA Intern Med.* 2014; 174(11): 1852-4.
- Benjamin EM et al. Impact of cardiac telemetry on patient safety and cost. *Am J Manag Care.* 2013; 19(6): e225-32.
- Drew BJ et al. Practice standards for electrocardiographic monitoring in hospital settings: an American Heart Association scientific statement from the Councils on Cardiovascular Nursing, Clinical Cardiology, and Cardiovascular Disease in the Young. *Circulation.* 2004; 110(17): 2721-46.



Month	UTH Admits	# w Telemetry	% of Telemetry	HS Admits	# w Telemetry	% of Telemetry
Jun-16	684	670	97.95%	107	86	80.37%
Jul-16	728	699	96.02%	75	57	76.00%
Aug-16	723	648	89.63%	49	39	79.59%
Sep-16	767	712	92.83%	69	59	85.51%
Oct-16	683	642	94.00%	72	51	70.83%
Jul-17	698	526	75.36%	53	35	66.04%



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